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ABSTRACT

The Peer Assisted Learning (PAL) Project at American River College (ARC) in Sacramento, California, was developed to improve retention rates among underrepresented students in math and science classes with high dropout rates. The project involved a group of 24 paid student Learning Assistants (LA's) who successfully completed the targeted courses and underwent a training program in small group peer assisted learning. The LA's met for 3 hours each week throughout the semester with a group of between two to six students, met weekly with the course faculty member to discuss student progress, and also met with one another to share their experiences. As part of the project, representatives from 10 "associate" colleges in central and northern California participated in the development and evaluation of the PAL, and received copies of all materials generated. To evaluate the program, focus groups were held with 15 LA's, 12 faculty members, and 32 study group students; pre- and post-semester surveys were administered to tutored and non-tutored students; and course grades and retention rates were examined. Highlighted findings included the following: (1) among students, 69% reported that the sessions were quite, very, or extremely helpful, and another 12% said they were helpful; (2) faculty reported that LA's were very helpful and brought students to an improved level of course performance; (3) LA's reported improved knowledge of the subject area, and a greater feeling of connection to the college; and (4) while tutored students reported lower high school grade point averages than non-tutored students, they performed as well or better than non-tutored students in project courses. (PAA)

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American River College

Beacon Project

Student Catalyst Program - Peer Assisted Learning

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First Semester Summary Report

April, 1993

— Beacon Associate Colleges —

Butte Community College
Cosumnes River College
Lake Tahoe Community College
Modesto Junior College
Napa Valley College
Sacramento City College
San Joaquin Delta College
Sierra College
Solano Community College
Yuba College

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AMERICAN RIVER COLLEGE
Beacon College Project: Peer Assisted Learning

Summary

American River College has been selected as an ACCJC/Kellogg Foundation Beacon College to implement the project **Student Catalyst Program: Peer Assisted Learning.** The project began in June, 1992, and will be completed in July, 1994.

Beacon Colleges are selected to implement the recommendations of the national report "Building Communities." The Peer Assisted Learning project was an outgrowth of the collegewide student involvement focus at American River College, begun in fall of 1991. It is based, to some degree, on research conducted by Uri Treisman at UC Berkeley on minority students in calculus. The ARC project is being piloted in certain math and science "sequence" classes that have high drop out rates. The project targets, but is not limited to, minority students that are underrepresented in math and science.

The project involves a cadre of 24 student "Learning Assistants" who have successfully completed the targeted course and who work with eight project faculty. The LA's will each meet with a small group (4-6 students) from the class for three hours a week throughout the semester. Students in the study groups will work on class assignments and supplemental materials. The Learning Assistants will meet weekly with the faculty member to discuss the progress of the groups and receive suggestions.

The Learning Assistants will undergo extensive training in small group peer assisted learning at the beginning of the semester. They will also meet together during the semester to share problems and successes. They will be paid for time spent in the training, small group sessions and meeting with the faculty.

It is anticipated that the students in the study groups will form close relationships with their peers: the Learning Assistants and the other students in the group. This added involvement in the learning process should lead to greater student success in terms of retention, grades and attitudes. A research component has been developed to measure the project outcomes.

In addition, the close relationships of the Learning Assistants with their faculty member, the other LA's, and the students in the groups should increase their involvement in the life of the institution. A possible side benefit could be to motivate students to enter the teaching profession.

A Beacon College agrees to involve other community colleges in the project. ARC's project has 10 associate colleges from central and northern California. They will participate in the development and evaluation discussions and will receive all materials developed.
Research Office, July 1992

AMERICAN RIVER COLLEGE
BEACON PROJECT

Student Catalyst Program - Peer Assisted Learning

First Semester Summary Report

Planning for the Beacon project, PAL, began in the spring of 1992 when the college learned it was funded for the two-year project by AACC/Kellogg Foundation. Project staff were selected (see attachment A). The project faculty were recruited from targeted courses (those that were part of a sequence and traditionally have a high drop out rate). Each project faculty member selected Learning Assistants (LA's) for the targeted courses, on the basis of having passed the course with a grade of B or better. The LA's as a group (24 total) reflected good participation by underrepresented groups.

Project staff met frequently during the summer months to organize the project, develop plans and resolve issues.

The 24 Learning Assistants started the program by attending a full day of tutor training the Saturday before classes started. Training continued during the semester for a total of 18 hours; students received one credit for the training and were paid for those hours.

The faculty in the project asked for volunteers to be in the study groups during the first weeks of class; underrepresented students were targeted however the project was open to anyone who was interested. The groups began meeting the fourth week of classes. Groups were to meet for three hours a week in any configuration; it was later agreed that two sessions of 1 1/2 hours seemed to be the best. Group size ranged from 2 to 6; the consensus among the LA's was that the most effective group size was 3-4 students. The composition of the study groups varied -- some groups were composed of lower level students; other groups had students with quite diverse skills and abilities. A major problem was finding rooms for the study groups to meet; this will be handled administratively next semester.

The Learning Assistants were paid $5 an hour for their training sessions, for three hours a week with their study groups and for one hour a week to meet with their faculty member.

The Learning Assistants were asked to keep careful attendance records of their study groups, and to keep a journal on how they approached the sessions and what results were obtained. The journals were collected and read monthly, with feedback given by the trainers.

The project was implemented in three disciplines: math, chemistry and biology. Each department approached the project somewhat differently, based on its needs. The LA's in chemistry were fairly advanced students who had taken a number of chemistry classes. The biology and math LA's tended to be students who had just taken one class in that discipline. The fact that the college offers considerable one-on-one tutoring for math may have impacted the participation of math students in the project; early results indicate that attendance problems were more pronounced in the math groups.

A meeting was held with representatives from the 10 associate colleges in northern California on Oct. 9, 1992. An overview was given by project staff and the project was discussed by a panel of LA's. Discussion followed on how ARC could help the Associate Colleges implement the model. The evaluative comments from the representatives was very positive.

One of the issues addressed by the project staff was the kind of research that should be conducted to evaluate the success of the project. The Research Office suggested an experimental design in which students interested in participating would be randomly placed in study groups (the treatment) or in control groups. However, the project staff felt that this could be detrimental to the project.

It was agreed that pre and post tests would be administered in the project classes to look at changes in knowledge and attitudes. Focus group sessions were conducted with project faculty, Learning Assistants and students in study groups. And, grades and retention in the project classes will be looked at historically.

Initial results of from the focus group sessions are encouraging (see attached report). Beacon projects are designed to meet the recommendations in the report Building Communities: A Vision For A New Century. The major objective of this project was to "increase the involvement of commuter students in the life of the college." Responses from both LA's and students in study groups indicate that bonds were formed between students and teachers and among students, and that the students felt more "connected" to the institution. In addition, faculty have reported dramatic improvements in the grades of some of the students in the study groups. And, chemistry students consistently said they didn't think they would have made it through the semester without the sessions.

Of the students in the study groups, 69% said the sessions were quite, very or extremely helpful and 12% said they were helpful. Some 16% said the sessions were moderately helpful and 3% said they were not sure.

There were some unanticipated positive outcomes: some students reported they were establishing study groups in other classes; some of the study groups planned to get together after the course was over and students reported greater sense of "competence" and "security."

The results of the focus groups have been used to make some modifications in the project for spring. The changes include modifications in the training, starting the study group sessions earlier in the semester (second week), paying LA's for some preparation time, and setting up a new system for assigning places for study groups to meet.

Additional first semester results relating to attitudes, grades and retention will be reported later.

Research Office
December, 1992

Summary of Results for Beacon Project - First Semester 1

Major Results of Focus Group Discussions:

* (Faculty) Learning assistants were very helpful and brought students to an improved level of course performance.

* (Faculty) The skill/motivational level of students electing to receive tutoring was diverse. The result was that some students made remarkable gains while others remained at a low performance level.

* (Learning Assistants) They reported improved skills/knowledge about the subject matter.

* (Learning Assistants) They felt more connected with the college.

* (Learning Assistants) There was a clarification and validation of likes and dislikes regarding professional matters (i.e., career choices such as teaching).

* (Learning Assistants) They felt good about themselves because they were helping others.

* (Learning Assistants) They felt good about their contribution because they believed the tutoring made a difference in academic progress.

* (Student Learners) Approximately 70% reported that the tutoring sessions to be either quite helpful, very helpful, or extremely helpful.

* (Student Learners) They felt a greater sense of competency.

* (Student Learners) There was more involvement with classmates leading to a better social climate and a sense of social connection.

* (Student Learners) There was a greater sense of connecting on a personal level with instructors.

* Student learners gave the highest ratings to the program, followed by learning assistants, then faculty.

Major Results Regarding Student Grade Performance:

* Tutored students, as a group, reported lower high school GPAs than the non-tutored.

* In spite of lower high school GPAs, the tutored group performed as well as the non-tutored group overall (i.e., no statistically significant differences in grade distributions of combined courses). In some courses, the tutored group outperformed the non-tutored.

Major Results of Student Survey (Given at Start and End of Semester):

* Both tutored and non-tutored groups lowered their academic loads over the semester. This also made more time available for study.

* Between 1% - 8% of all students reported no emotional support from family or significant others for going to college.

* The tutored group expressed more worry about being successful in the target course than the non-tutored.

* Recommendations for the course and the particular instructor were high positive for both groups (e.g., 77% - 83%).

* Students who withdrew from their courses, as a group, usually had lower high school GPAs than either tutored or non-tutored groups.

* Students who withdrew from their courses, as a group, revealed differences on the survey instrument (given at start of term) from tutored or non-tutored students who persisted:

(Had less time for academics; course was of lower priority; received less emotional support for college from others; had more negative advance publicity about course; had less success with previous similar courses; perceived the course as requiring much more work than other courses; were more worried about their success in the course)

Focus Group Evaluation of the First Semester (Fall 1992)

A. Results of Faculty Focus Session (12 Faculty Members)

Faculty perceptions of learning assistants:

1. Learning assistants were very helpful and brought students to an improved level of course performance.

2. Students seemed to learn more when learning assistants involved the students in active learning rather than a strict lecture format.

3. Chemistry learning assistants excelled beyond teachers' expectations.

4. On the negative side, learning assistants sometimes choose to miss meeting with their group due to their own study requirements, e.g., before a test. Faculty needs to know what to do when learning assistants are absent. (Faculty members are not always available to take over the study sessions.)

5. There were different learning assistants' styles of tutoring, some quite rigid, some loose. Perhaps this could be standardized a bit without eliminating individuality.

Extent of Faculty Drop-ins and Meetings with Learning Assistants:

Most faculty were not able to consistently drop in on sessions because they were not free at that hour; however, most did observe at least one session. Faculty did meet once a week with the learning assistants.

Faculty Impressions of Students Who Received Tutoring:

1. The skill and motivational level of students electing to receive tutoring was quite diverse. The result was that some students made quite remarkable gains while others remained at a low performance level.

2. It is important not to compare students who received tutoring with those who didn't unless the entry skill levels can be equated.

3. It was suggested that some students were overly reliant upon the learning assistants. This would indicate that expectations need to be better communicated and reinforced.

4. It was perceived that success for any student in a group seemed positively related to consistency in attendance. It would seem to the evaluators that some type of student commitment (e.g., regular attendance) is necessary for adequately measuring the impact of tutoring. As long as the tutoring sessions are structured as "drop-in as needed," the outcomes cannot be properly evaluated.

Personal Benefits to Faculty:

1. They are pleased with the good progress of a few students while being disappointed with others.

2. They wonder if the costs of the program justify the impact upon the students who benefited.

3. They mentioned that the "success" of a few in each group was quite satisfying.

4. The program allowed faculty to feel good about offering students an alternative (tutoring) if they needed it.

5. Faculty felt good about believing that students would perceive them as a caring instructor.

6. Through their meetings with learning assistants, faculty gained more insight into the difficulties students were experiencing. This in turn allowed for instant changes in the course.

7. Some repetitious lecturing was reduced because tutoring could substitute.

8. The downside to the program according to teaching faculty was the significant increase in workload for the faculty (e.g., meeting with learning assistants, preparing materials.)

Summary Rating (with 10 being the highest, 5 neutral, 1 the lowest)

Mean = 6.55

B. Results of Focus Group Sessions with 15 Learning Assistants

Training:

There was concensus that the training dragged at first. The 8 hours on Saturday was simply too long and not always productive. They suggested two 4-hour sessions on a week day, or watch the training videos in the LRC by a certain date. It was suggested that videos be additional resources rather than a requirement.

They liked the guest speakers, especially former experienced learning assistants. They wanted more and earlier training in study skills, test anxiety, and setting up the first tutoring session. They also want more training in dealing with students who present language barriers or learning disabilities (perhaps in the form of role play). They thought the brainstorming problem-solving sessions among themselves were very helpful. It would have been ideal to receive training before starting the tutoring because some of the encountered problems came before receiving training on the topic. The training environment was good (as were the cookies).

The faculty trainers were excellent in terms of role playing the tutor. Overall, the training was good, as was the sequence of topics. Trainers were responsive to requested changes. Handouts were good, but a bit overwhelming when presented in one package. It was suggested that handouts be spaced. It was also suggested that students majoring in the subject matter be used as learning assistants. An example rationale was that Biology 16 draws its students from the general population which is where the learning assistants come from. Some learning assistants felt they did not have suitable breadth in the subject matter.

Assistance:

All believed the relationships with teaching faculty and faculty training staff were excellent and very helpful. Several expressed appreciation that the instructors were very responsive in terms of providing materials ahead of class time.

General observations:

Learning assistants initially seemed not to have a clear understanding of the amount of time that would be required of them. Many learning assistants exceeded the required hours as some students wanted additional help, e.g., calling them at home. Learning assistants were told that their preparation time would be financially compensated but apparently it wasn't. Many did not need the course units. While none of the learning assistants expected to make a lot of money, they did have a common feeling of being undercompensated for all their time spent with preparation, students, and faculty. Some even indicated that the total hours in the tutoring program prevented them from taking another required course or seeking a better job. Some said that while the experience was very positive, they would not have signed up if they had known beforehand the number of hours involved.

There was little or no advance publicity for enrolled students about the program. As a consequence, arranging mutual times for ongoing tutoring sessions was very difficult. They suggested publicizing in the schedule of classes.

Attendance decreased because of no advanced scheduling for mutual meeting times. It was a common perception among the learning assistants that students who dropped out (between 50 - 67%) did so mostly because of scheduling difficulties which interferred with outside obligations rather than dropping out because of the amount of work required. In some instances (especially chemistry), student attendance would increase as course demands also increased. Rather than total student commitment for the duration of the course, there was considerable dropping in and out of tutoring.

The tutoring sessions need to be scheduled either shortly before or shortly after the class meets, especially in the case of math.

What the Learning Assistants gained from the experience (not in order):

1. Improved speaking and communicating skills. Thinking fast in response to questions.
2. Assertiveness, that is, an ability to confront when necessary.
3. Improved skills/knowledge about the subject matter.
4. Better listening skills
5. A sense of challenge which served as a goal.
6. Felt more connected with the college as a result of the experience.
7. Felt more confident about themselves (e.g., skills, ability).
8. Realized what it's like to have unprepared students, thereby improving their own preparation for other courses.
9. Increased appreciation of study group as a technique. Several indicated they have formed study groups in other courses for their own benefit.
10. A clarification and validation of what they like and don't like regarding professional matters, e.g., career choices such as teaching.
11. Felt good about themselves because they were helping others.
12. A greater respect for teachers.
13. A greater sense of empathy for fellow students.
14. Developed new friendships.
15. Developed new and professional relationship with instructors.

16. Felt good about their contribution because they believed the tutoring made a difference in their students, e.g., saw progress. However, they also felt personally responsible when a student didn't do well on a test.

Summary Rating: (10-point scale with 10 being "extremely positive and 1 being a "very bad experience.")

Mean = 7.65

C. Results of 12 Student Learner Focus Sessions (32 Student Learners)

Helpfulness of Tutoring Sessions:

69% reported that the sessions to be either quite helpful, very helpful, extremely helpful, or a life-saver.

12% reported that the sessions were helpful.

16% reported that the sessions were moderately or somewhat helpful.

3% reported that they were not sure.

Perceptions about Skills of Learning Assistants:

1. All 32 students thought that their learning assistants were adequately skilled in the subject.

2. Many students reported that their learning assistants were especially effective in simplifying concepts down to a beginner's level.

3. Students liked the fact that most of the learning assistants had not forgotten what it was like to be learning the course material for the first time.

4. Students generally perceived their learning assistants to be very patient as well as empathetic.

5. Learning assistants also reminded students of important dates (e.g., deadlines for dropping a course, etc.).

6. Most students reported that they were not afraid to ask their learning assistants questions, but often hesitated to ask the same questions in class. Among these students, most of them reported that they are now more comfortable asking questions in class as a result of the tutoring sessions desensitizing them.

How the Tutoring Experience Has Affected Students: (not specifically related to academic success)

Students reported a variety of different ways the experience affected them:

1. A sense of accomplishment.

2. A sense of competence and security (e.g., "I don't feel dumb anymore").

3. More involvement with classmates leading to a better social climate and a sense of social connection (e.g., students found that they sometimes shared similar professional and/or educational goals with another member of the study group).

4. The group cohesiveness made learning more enjoyable while the input and different ideas from group members helped facilitate the learning process.

5. Improvement in time management (e.g., students saw the value of staying on campus longer and utilizing the library more often to get their studying done. They also reported that the sessions often filled a gap between classes in a more productive way).

6. There was application of study skills learned in the tutoring sessions to other courses.

7. Greater sense of connecting on a personal level with their instructors.

Students Recommendations for Improvement of the Program:

In general, students conveyed that the program was good and they hoped it would continue. Chemistry students consistently said they didn't think they would have made it through the course without the sessions. Many said that they probably would have had to drop. Suggestions made by the students were:

1. Regular attendance should be required for maximum benefit.

2. Most students reported that 4 people is the ideal group size because they felt like they received enough personal attention. It also provided more input and thinking power than just 2 or 3 people.

3. More private meeting rooms need to be available so that they don't worry about disturbing other students who are also studying.

4. Students conveyed concern over losing the best learning assistants due to insufficient compensation for all of the time the learning assistants were giving.

5. The program needs to be publicized more.

6. In regard to diverse skill levels and potential learning disabilities, it was suggested that students be pre-assessed for learning skills and special problems before beginning in order to help prepare the learning assistants for what they may encounter.

7. Students would like the option of having more tutoring than the normal 3 hours each week. It was suggested that they could benefit from having a list of tutors that are available to call or meet with them at specific times beyond their regular 3 hours per week.

8. Learning assistants need to be aware of the different learning modalities (visual, auditory, etc., and use a variety of them in their sessions).

9. Students generally preferred leadership, structure, and focus from their learning assistants. They also want their learning assistants to appear confident so that they will not lose confidence in them.

10. Some Biology 16 students conveyed problems with some students who attended the sessions unprepared (e.g., did not work on questions in packet). This created potential conflict for the learning assistant who had the unprepared students wanting the answers to the questions and the prepared students wanting to review or go over areas of difficulty.

11. Nearly all chemistry students requested that the students in the sessions should be matched up with the learning assistant assigned to their instructor. They also thought that their learning assistant should have learned from the same instructor that they are learning from. Their reasoning was that two different instructors can teach the same course with a different style or focus (e.g., one may focus on essays and a conceptual format while the other may focus on problems and a computational format.)

12. Chemistry students also felt it would be very helpful if the instructors would provide the learning assistants with problems very specific to what they would be tested upon.

Students' Role in Improving the Tutoring Sessions:

All students said that regular attendance, punctuality, and preparedness was their responsibility. Preparedness was emphasized so that tutoring sessions could be focused on reviewing the material. Being alert and participating were also emphasized.

Summary Rating (with 10 being the highest, 5 neutral, 1 the lowest).

Mean = 8.31

D. Key Points for Administrative Consideration:

- Improved communication with learning assistants regarding what is expected in terms of work load.
- Increased compensation for learning assistants.
- Accelerated training format for learning assistants.
- Specific training for learning assistants regarding learning problems of students.
- Increased standardization of the tutoring approaches of the learning assistants (without lowering creativity).
- More advance publicity of program with scheduled hours and rooms for tutoring.
- Increased student commitment (attendance, preparation for tutoring sessions) without overreliance upon the learning assistant.
- The learning assistant and all students who attend the tutoring sessions are both connected with the same instructor during all such sessions.
- Guidelines be developed regarding the learning assistant who electively cannot meet with students on a given day nor can the instructor meet at the designated hour when the session is to be held.
- The impact of tutoring cannot be precisely evaluated if students are free to drop in or out of tutoring sessions as desired.